REMARKS

Applicant appreciates the phone calls from Examiner Heyi, indicating that our claims distinguished over the previous prior art but raised an issue with regards to Claim 35 being rejected under new grounds of 35 U.S.C. §101.

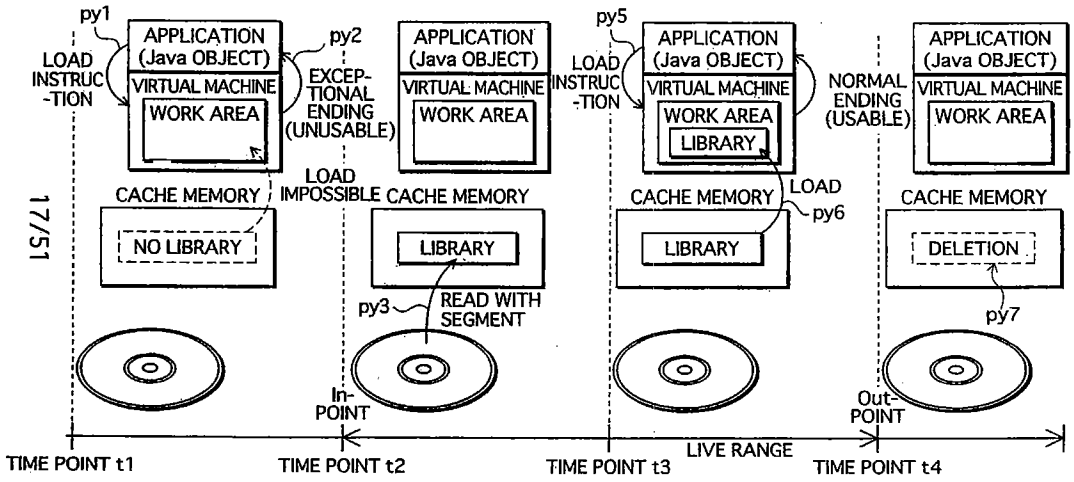
Our present invention as defined in our Disclosure of the Invention, permits a program, for example a video game to be integrated within an optical disc and more specifically, to be synchronized with playback of a segment by disposing it in front of the segment in the form of an interleave unit. One of the advantages of this format instruction in an optical disc is that it is possible to read each segment constituting the digital stream, together with a program to be synchronized with the segment by only a slight movement or a reposition of the optical pick up head by a relatively small distance from the beginning position of the segment.

Our present invention permits a plurality of programs to be synchronized with a digital stream and utilizes a resource management capability wherein each program can be deleted from a cache memory each time a selected program execution has been completed. Thus, the size of the memory in the reproduction apparatus can be limited, which is an important economical factor in a commercialized product, since we would only need a size sufficient to be able to perform the program loading.

With out present invention it is possible, for example, where a program is game software that requires synchronization with an AV playback of a digital stream to utilize a minimal amount of memory and thereby encourage programmers to create gaming programs in an operating environment where synchronization with an AV playback could be easily achieved.

The integration of programs from a library can be implemented as shown, for example, in Figure 17.

FIG.17



Our specification clearly defines synchronization and the advantages of a creation of these libraries from interleave units that can be utilized in a player with a limited buffer memory capability. Additionally, the term "synchronous" is defined in *Webster's II New Collegiate Dictionary*, as follows:

> **syn·chro·nous** *adj.* [Llat. *synchronos* < Gk. *sunkhronos* : *sun-*, same + *khronos*, time.] 1. Happening at the same time. 2. Moving or operating at the same rate. 3. a. Having identical periods. b. Having identical period and phase.

Accordingly, as used in our Claim 1, the term synchronously refers to "at the same time." That is, the library of programs, created from the interleave unit, is recorded in the digital stream represented on the optical disc "in front of an *i*th segment to be played back." The duration of its viability for supporting the optional feature is provided as an enhancement, for example of additional information associated with the sale of a movie on a BD ROM. Thus, we can provide desired optional features of programs integrated into a playback of a digital stream, independent of the original editing of the movie work and time periods can be recorded on the viability of the

interleave units with potential deletion by overwriting of an associated cache memory utilized in the playback control engine.

The Office Action has now rejected Claims 1-10, 12, 15, 16, 20, 23-25 and 28 as being completely anticipated by *Oshima et al.* (U.S. Patent No. 6,925,250).

> "An anticipating reference must describe the patented subject matter with sufficient clarity and detail to establish that the subject matter existed in the prior art and that such existence would be recognized by persons of ordinary skill in the field of the invention." *See In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990); *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 678, 7 USPQ2d 1315, 1317 (Fed. Cir. 1988).

The *Oshima et al.* reference teaches an optical disc which can record both high resolution and lower or normal image resolution data which can coordinate for playing back on a reproduction apparatus. Accordingly, an optical disc can have recorded thereon a first video stream of a low frequency component of a video signal, and a second video stream representing a high frequency component of a video signal.

The optical disc recording apparatus of Figure 1 records an original 720 P video signals into a compressed format of a GOP-based video signal including an intraframe and differential frame into second interleaved blocks that are interspaced with first interleaved blocks of a normal 480 P GOP-based video signal. A hierarchical identifier section indicates start and termination points and "specified interleave block reproduction prohibition information" to prevent 720 P GOPs from being reproduced on a conventional reproduction apparatus.

Oshima et al. discloses the following structures: a high resolution-video signal is divided by video division means into a main signal and a sub signal, and the main signal and the sub signal are MPEG-encoded. The stream of the main signal and the stream of the sub signal are divided into 1 GOP or more of frames and first interleave blocks, each including 1 GOP or more

of the stream of the main signal and second interleave blocks, each including 1 GOP or more of the stream of the sub signal are alternately recorded on an optical disc. According to such an optical disc, the high resolution video signal can be obtained by a high resolution reproduction apparatus reproducing, in synchronization, data recorded in the first interleave blocks and data recorded in the second interleave blocks while standard resolution video can be obtained by a non-high quality picture reproduction apparatus reproducing one of data recorded in the first interleave blocks and data recorded in the second interleave blocks.

Oshima et al. also discloses, in Column 23, Lines 59-64, the structure that enables synchronous reproduction of (i) video and audio and (ii) video and sub picture (subtitles).

> Accordingly, picture, audio and sub picture (subtitles or the like) signals are synchronized, and picture and audio are reproduced seamlessly with no interruption. The audio signal and the sub picture signals of stream A can be omitted.

Figure 41 illustrates a case where the interleave units represent audio data.

FIG. 41

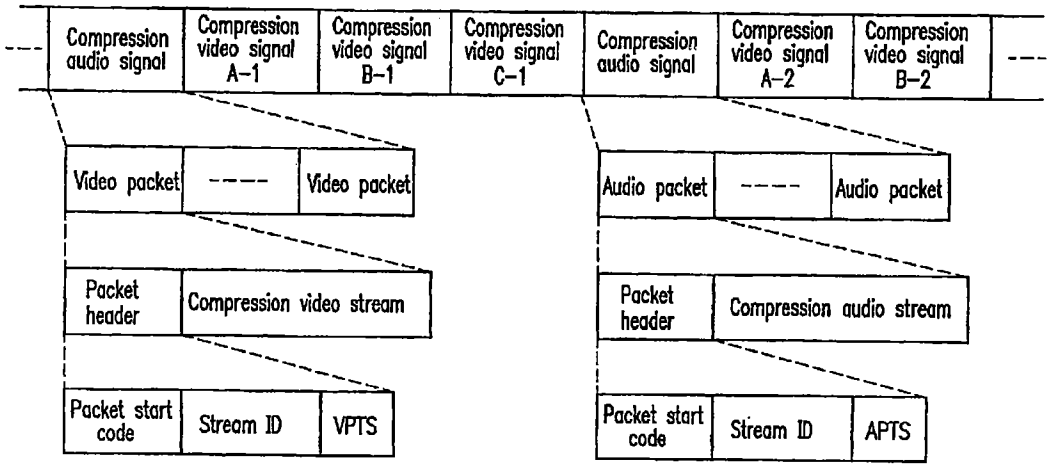
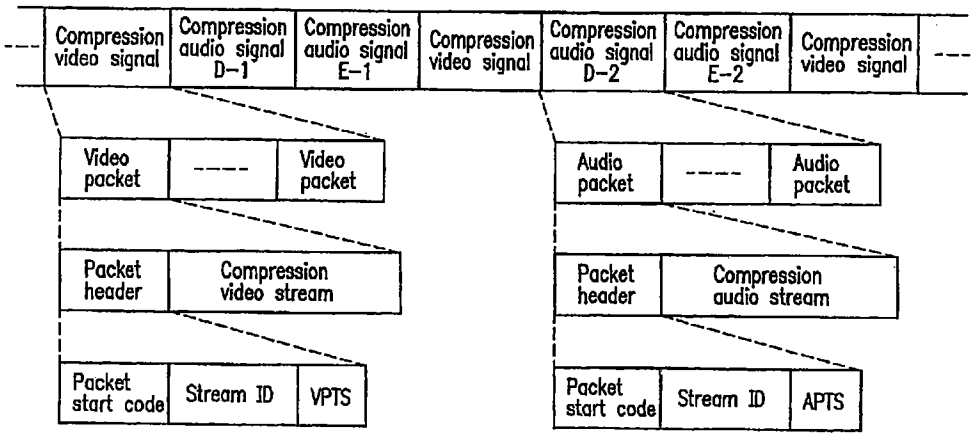


Figure 52 illustrates a case where the interleave units represent video data.

FIG. 52



As set forth above, *Oshima et al.* discloses a structure where both of the first interleave blocks and the second interleave blocks have recorded therein data to be reproduced in synchronization.

However, *Oshima et al.* does not teach the invention of the present application where an interleave unit, which is recorded in front of a segment, includes a program, from a library, to be synchronized with playback of the segment. Although Figure 29 of *Oshima et al.* shows a flowchart of the detailed process of reproduction of a program chain group performed by the system control section, it does not suggest the structure of the invention of the present application where "an interleave unit, which is recorded in front of a segment, includes a program to be synchronized with playback of the segment."

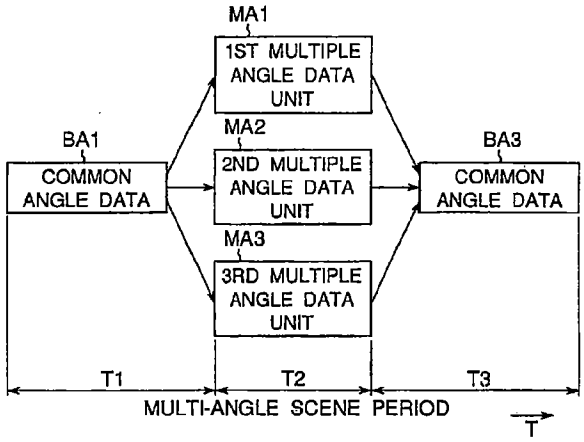
Claims 11, 13, 14, 17 -19, 21-22, 26, 27 and 29-37 were rejected as being obvious over the *Oshima et al.* reference in view of the previously cited *Yamane et al.* (U.S. Patent No. 6,393,196).

As mentioned above, *Oshima et al.* is deficient in citing the features of the present invention and accordingly, a close review of the *Yamane et al.* reference should be undertaken to determine its capability to resolve the deficiencies in the *Oshima et al.* disclosure.

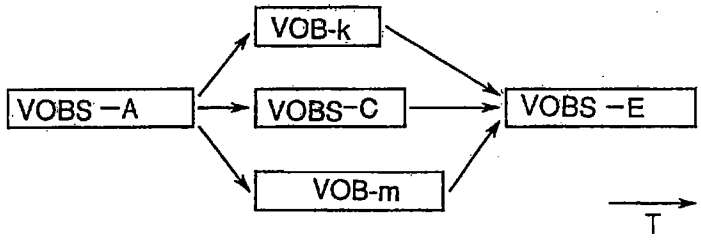
The *Yamane et al.* reference teaches synchronization of AV data with timing signals to accommodate a delay time, TD that was required by a source stream buffer in an authoring procedure. As described in Column 8, Lines 51-55, the *Yamane et al.* system for encoding parameter data and start/stop timing signals permit a system encoder to apply a "multiplexing coding process to generate a time edited unit (VOB)."

Applicant respectfully submits that Figure 36 schematically teaches editing capability in formatting the master disc that would permit a branching of the VOBs sequentially and not synchronously played at the same time. Figure 36 basically taught two alternative branching VOB-K and VOB-M. Note, as shown in Figure 10 of *Yamane et al.* this branching scheme could be represented as a choice of multi angle scene periods to provide an alternative choice to the user as to the view of a particular movie sequence.

Fig.10



In this regard, the common angle data for a continued sequential playing of the movie scenes are considered to be VOBs-A, VOBs-C and VOBs-E as follows:



Schematically, the sequential and non-simultaneously playing of the VOBs can be seen from the following modified Figure 36. Thus, the VOB-k and VOB-m are only mixed at interleaved block regions in the digital stream and decoded and combined in a buffer memory as one full VOB, e.g. 4 seconds of minimum playtime, Column 17, Line 22. Only one sequence of either the VOB cell number k or VOB cell number m would actually be played if, for example, one of the multi angled views is selected. Note, the playing will still be in a sequence of either k1 through k4 or m1 through m4, and will not be played, as defined in our Claim 1, in a synchronous manner with a playback of an *i*th segment. That is, at the same time as the playback of the *i*th segment. The Office Action is misinterpreting a VOB as an *i*th segment in our claims, and it is believed that the above explanation associated with Figure 36 illustrates clearly the difference of the present invention.

Fig.36

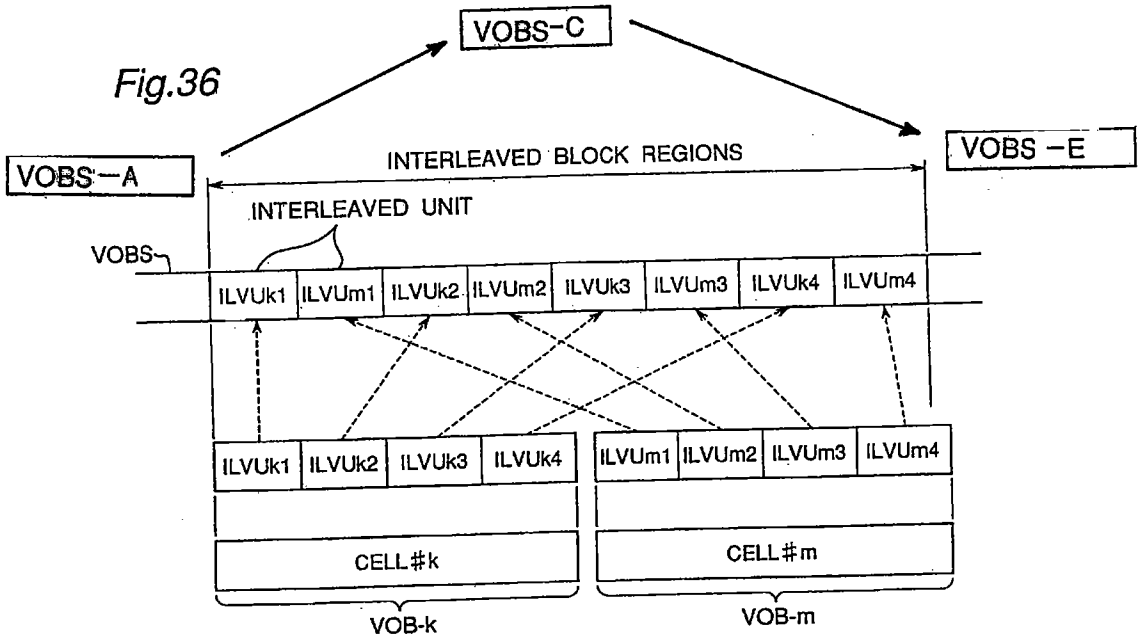


Figure 36 of *Yamane et al.* shows the interleaved VOB segments. Specifically, Figure 36 shows a process of branching from one scene (the last VOB) to two different scenes (VOB-k and VOB-m). According to *Yamane et al.*, VOB-k and VOB-m are each divided into segments called interleaved units. The interleaved units of VOB-k and the interleaved units of VOB-m are alternately arrayed. In the interleaved block regions, multi-angle reproduction can be performed by selecting and reproducing one of (i) the interleaved units belonging to VOB-k or (ii) the interleaved units belonging to VOB-m. The decoder and buffer will construct the relisted VOB and only display that VOB by itself.

In our invention, a digital stream is divided into segments. An interleave unit of the present claims refers to a program executed in synchronization with one of the segments, and each interleave unit is recorded in front of the corresponding segment.

Yamane et al. neither discloses nor suggests the above-described disclosures of the present application, i.e., the segments generated by dividing the digital stream, and each program can be arranged in front of the corresponding segment.

The invention of our independent Claims 1, 15 and 35-37 and the invention of *Yamane et al.* disclose different targets for synchronization.

Yamane et al. disclosed that a video signal St1, a subpicture signal St3 and an audio signal St5 are encoded in accordance with the scenario data St7 in synchronization with timing signals St9, St11 and St13, respectively (the timing signals St9, St11 and St13 correspond to the generated video, subpicture and audio, respectively). In other words, *Yamane et al.* merely discloses that each stream is in synchronization with the corresponding encoding signal.

Our claims define the segments included in the digital stream, the *i*th segment and an interleave unit recorded in front of the *i*th segment are displayed together in synchronization with each other. Stated another way, a segment and an interleave unit to be brought into synchronization with each other are both recorded in the same digital stream and are to be played back and displayed synchronously.

In summary, it is believed that with the proper understanding of the terminology used in our claims and the inability of the *Yamane et al.* reference to teach the same claim features alone or in combination with *Oshima et al* renders our invention as non-obvious.

> "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley,* 27 F.3d 551, 553 (Fed. Cir. 1994); *see KSR*, 127 S. Ct. at 1739-40 (explaining that when the prior art teaches away from a combination, that combination is more likely to be nonobvious). Additionally, a reference may teach away from a use when that use would render the result inoperable. *McGinley v. Franklin Sports, Inc.,* 262 F.3d 1339, 1354 (Fed. Cir. 2001).

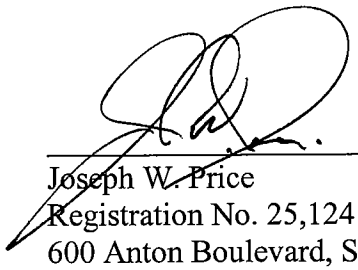
In re Icon Health and Fitness, Inc. 2007 U.S. App. Lexis 18244, *10

It is believed that the present application is now in condition for allowance and an early notification of the same is requested.

If the Examiner believes a telephone interview will assist in the prosecution of the case, the undersigned attorney can be contacted at the listed phone number.

Very truly yours,

SNELL & WILMER L.L.P.



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